



Urban Water Management Plan, 2005 Update Section 2 – Contents of UWMP

2.6 Water Use by Customer (§ 10631(e))

Currently EGWS billing software tracks two different types of users, residential or commercial. The billing software is new, but the data was converted from an older system that had limited capabilities. In addition to customer types, EGWS has a significant number of unmetered service connections. EGWS is currently developing a meter retrofit program to comply with recent legislation. Details of the meter retrofit program will be provided in the next UWMP update expected in 2010. **Table 2-10** identifies the past, current and projected water deliveries for EGWS' Tariff Area No. 1 only by customer type.

TABLE 2-10 Past, Current and Projected Water Deliveries (Tariff Area No. 1 only)						
Water Use Sectors	Residential ¹		Commercial ²		Totals	
Year	#	AFY ³	#	AFY ³	#	AFY
2000 - Metered	1,275	1,034	184	149	1,459	1,183
2000 - Unmetered	5,804	4,707	144	117	5,948	4,824
2005 - Metered	1,443	1,170	214	174	1,657	1,344
2005 - Unmetered	5,804	4,707	144	117	5,948	4,824
2010 - Metered	1,588	1,288	221	179	1,809	1,467
2010 - Unmetered	5,804	4,707	144	117	5,948	4,824
2015 - Metered	1,662	1,348	225	182	1,887	1,530
2015 - Unmetered	5,804	4,707	144	117	5,948	4,824
2020 - Metered	1,811	1,469	154	125	1,965	1,594
2020 - Unmetered	5,804	4,707	144	117	5,948	4,824
2025 - Metered	1,880	1,524	157	127	2,036	1,651
2025 - Unmetered	5,804	4,707	144	117	5,948	4,824
2030 - Metered	1,895	1,537	157	127	2,052	1,664
2030 - Unmetered	5,804	4,707	144	117	5,948	4,824

①
7
NOT
SHOWING
ANY
CHANGE
IN ~~AFY~~
CONNECTIONS

②
ALL UTILITIES
MUST BE
FULLY METERED
BY JAN 1 2025

¹ EGWS Billing database does not currently distinguish between single-family and multi-family units.

² EGWS Billing database does not currently distinguish between commercial, industrial, institutional, and landscape units.

³ EGWS converted billing system to new software and is currently not able to generate more detailed data for metered accounts. Water usage for 2000 and 2005 is based on historical average water consumption on a per service connection basis over a period of 16 years of data from 1989 - 2004. The water deliveries include unaccounted for system losses since there are unmetered service connections and no way to extract this data.





Table 2-11 identifies the total past, current and projected water use for Tariff Area No. 1 only.

Table 2-11 Total Water Use - AF Year (Tariff Area No. 1 only)							
Water Use	2000	2005	2010	2015	2020	2025	2030 - opt
Total from Tables 2-10	6,007	6,168	7,757	7,835	7,913	7,984	8,000

2.7 Demand Management Measures (DMMs) (§ 10631(f-j))

Water Conservation Programs

The FRCD/EGWS is committed to wise water use and conservation measures. Responses to the fourteen Best Management Practices, including descriptions of the FRCD/EGWS conservation programs, are below.

BMP 1—Water survey programs for single-family residential and multi-family residential customers

Out of safety concerns for its staff, the FRCD/EGWS maintains a policy of not entering customer residences. Therefore, indoor water surveys have not been implemented. However, beginning in 2004, the conservation coordinator implemented a program to make residential visits and provide customers with information and education to reduce water waste within the home. Customers are told how to locate leaks and are given toilet leak tablets to perform tests for themselves. No internal surveys are conducted. At their request, customers can receive a demonstration on how a water meter works and how to tell if the meter is running. Over 200 residences have received water conservation information in 2005.

The FRCD/EGWS has a certified landscape irrigation auditor on staff and free landscape irrigation audits are offered to all customers. These audits have been advertised on the water bills, in newspaper articles and advertisements and on the company website. During these audits, irrigation systems and timers are checked and irrigation scheduling is discussed. Audits also include distribution uniformity tests and other inspections of irrigation systems. Customers receive a complete follow up report that details all conservation recommendations for the landscape. Fourteen single family residences and two multi family surveys were completed in 2004. In 2005, FRCD/EGWS projects the completion of 20 more single family surveys.

Many of the audited residences are on flat rates, so FRCD/EGWS is unable to determine water savings on these accounts. Tracking the bimonthly bills for metered





accounts indicates a reduction in water costs between 12% and 27% after a landscape irrigation audit.

The FRCD/EGWS participates in the Regional Water Efficiency Program Advisory Committee (RWEFAC), which recently published a cover article in the Landlords Newsletter promoting audits to multi-family property owners and landlords.

BMP 4—Metering with commodity rates for all new connections and retrofit of existing connections

All homes built in Elk Grove since 1992 have meters and are billed by volume of use. The FRCD/EGWS is currently investigating a variety of options for retrofitting all existing unmetered connections and will meet the 2024 deadline.

BMP 5—Large landscape water audits and incentives

The FRCD/EGWS is participating in the Regional Water Authority's (RWA) Large Landscape Irrigation Efficiency Program. This is a grant program issued by DWR and the FRCD/EGWS's share is \$15,000. FRCD/EGWS is working with the Elk Grove CSD to audit, budget and retrofit six parks within our district. In addition, the conservation coordinator has completed two large landscape audits on other candidates for this program, a nine acre apartment complex and an elementary school.

The FRCD/EGWS assisted in the RWEFAC's booth at the Pesticide Applicators Professional Association seminar on December 6, 2005. The booth was an outreach to professional landscapers, and exceptionally well received by the more than 400 seminar participants.

BMP 7—Public information programs

The FRCD/EGWS participates in public awareness programs through our association with Sacramento Area Water Works Association and RWEFAC. The FRCD/EGWS distributes information through brochures, paid advertisements, articles and interviews in the local paper, door to door conservation visits, booths at public events and door hangers. The RWEFAC recently completed a billboard campaign and has installed a conservation hotline which refers customers to the appropriate water agency for assistance. The campaign promotes "Be Water Smart." A FRCD/EGWS staff member is on the RWEFAC's public outreach subcommittee, which has drafted an overall strategy and marketing plan for public outreach support. The FRCD/EGWS was active in the creation of the new Water Wise Gardening software for water conservation residents of Sacramento, El Dorado and Placer counties. This software is available to all customers on request. It has been featured in the local newspaper, distributed at public events and advertised throughout the area.





The FRCD/EGWS hosted a presentation on homeowner irrigation with RWEPA in the spring of 2005. This event was open to the greater Sacramento area community. In addition, the FRCD/EGWS has created a water efficient garden at the new Water Treatment and Storage Facility to serve as a model to the community. The FRCD/EGWS has been instrumental in the development of the new Elk Grove Community Garden, which will include a community gathering area for classes and water efficient demonstrations. The FRCD/EGWS will be partnering with the community garden to present classes in the spring.

According to Title V, Article 12, Section 12.2 of the FRCD Ordinance 08-10-05-01, one home in each model home display must be landscaped with water efficient plant material and irrigated with appropriate water conserving irrigation systems. Displays are in place to inform the public about the landscape and its materials.

BMP 8—School education programs

The conservation coordinator has used her teaching experience to develop age appropriate water conservation materials and has made several presentations to elementary school classes. The presentation offers a brief overview of the need for water conservation in California before going into specifics about water use within a student's home and ways they can conserve. The students receive a "Test a Toilet" challenge to take home and complete with their parents. This activity reinforces the classroom learning, gives the student a chance to share their knowledge with their family and provides an opportunity to find and repair leaks in the home toilets. Finally, the students are given handouts, such as the Mr. Leaky brochures and/or other conservation materials.

FRCD/EGWS is looking forward to expanding our educational program by inviting classrooms to tour our new Water Treatment and Storage Facility. There students will be able to view the water utility process first hand. The conservation coordinator has developed a relationship with several of the area high schools and assists with a variety of environmental projects, particularly those that relate to water quality. The FRCD/EGWS also plays a role in community events where children are active, such as Creek Week and the Harvest Festival in Elk Grove. The FRCD/EGWS supports the Great Water Mystery school assembly program, produced by the Sacramento Stormwater Management Program, South Yuba River Citizens League and RWA. Twelve schools in the FRCD boundaries participated in last year's program and several schools in the EGWS district are already scheduled for this year.

Board members and staff of EGWS/FRCD serve on the board for the Elk Grove Unified School District's CalServe Partnership, providing support for a variety of educational projects developed by teachers.





BMP 9 – Commercial and industrial water conservation

The FRCD/EGWS has participated in the Rinse and Save program for the last two years. This program visits Commercial, Industrial and Institutional (CII) customers and replaces high water use spray nozzles with water efficient models at no cost to the customer. The FRCD/EGWS spent approximately \$1900 on the program in 2004 and will spend a similar amount in 2005.

Elk Grove is primarily a residential community, a “bedroom” suburb to Sacramento. The FRCD/EGWS has very few CII accounts and the billing system does not differentiate between commercial, industrial and institutional accounts. For example, restaurants, schools and retirement homes all fall under the same commercial category. There is no major industry or large facility, such as a hospital, within the district boundaries. Therefore, water conservation efforts have largely been focused on homeowners and school education programs.

The conservation coordinator completed BMP 9 training in November 2005, having attended a two day seminar to learn how to conduct business water efficiency surveys.

BMP 12 – Conservation coordinator

A conservation coordinator was hired in February 2004. It is a full time position; however, her duties are split between FRCD work and EGWS projects. Since taking the job, she has received certification as a landscape irrigation auditor and as a conservation coordinator. She has also implemented a free landscape irrigation audit service, conducted several conservation presentations in local schools, created or purchased a variety of water conservation publications and distributed the same, developed a community booth and materials for public events, written a number of conservation articles for the newspapers, participated in a number of public and private meetings on a number of water related subjects, written grant applications and managed a variety of other projects.

In addition, several staff members assist with conservation efforts. Customer service personnel frequently counsel customers on ways to reduce water use. Field crew demonstrate how water meters work and are often the first contact customers make when needing information on how to reduce a water bill. In the summer of 2005, a high school intern was hired to promote conservation awareness. This employee patrolled district neighborhoods, leaving door hanger notices of water waste, talking with residents about ways to reduce water use and distributing conservation materials. She also assisted with landscape irrigation audits, and the local newspaper published a front page article and interview about her work.





BMP 13 – Water waste prohibition

FRCD/EGWS advises a voluntary odd/even watering system. In 2005, the FRCD/EGWS hired a summer intern to do community outreach and to patrol neighborhoods, talking to residents and leaving informational materials and door hanger warnings for water waste. Residents receive door hanger notices for gutter flooding, watering on the wrong day, and other wasteful actions. Customer education continues through a series of newspaper articles, paid advertisements and participation in community events. Unmetered homeowners who repeatedly violate conservation measures can be issued a water meter.

Because Elk Grove is experiencing such tremendous growth, the FRCD/EGWS places top priority on maintaining vigilance against construction water misuse. Permits must be obtained through our office before construction begins. Permits must be displayed on the work site while water is taken. Permits for water trucks must be carried in the vehicle. Persons using water outlets (such as fire hydrants) without authorization are fined \$100 for each offense.

Violations of the FRCD Ordinance are served with a written notice by the General Manager and provided time for correction. If not corrected, ordinance violations can be declared a misdemeanor and result in fines up to \$1000 and/or imprisonment. Residents who violate water conservation measures can lose their water service if they do not correct the violation after written warning.

2.8 Demand Management Measures Not Implemented (§ 10631(g))

Some Demand Management Measures (DMMs) or Best Management Practices (BMP) have not been implemented by EGWS as not all of them provide sufficient benefit when compared to the cost to implement such a measure. The following information provides a discussion of each DMM or BMP that is not being implemented at this time. As the cost for water increases over time, some of the DMMs may be beneficial for EGWS to implement in the future.

BMP 2 – Residential plumbing retrofit

Plumbing retrofits are not cost effective for the FRCD/EGWS. The older homes in Elk Grove, which would receive the benefits of a retrofit program, are currently not metered and there is no way to calculate the water savings for implementing such a program. FRCD/EGWS does not have the staff available to do a door to door distribution. However, the FRCD/EGWS did receive some retrofit kits from another water facility in early 2005 and has distributed these kits at public events throughout the year. Approximately 120 low flow showerheads, toilet displacement bags and 240 faucet aerators have been given to residents. The conservation coordinator provided installation instructions and other information with the kits.





Project costs to implement a residential plumbing retrofit are estimated to be over \$123,000, which is well outside our available budget. Because most of the homes that would be retrofitted do not have meters, we are unable to calculate exactly what the water savings for such a program would be. Based on estimates supplied by the retrofit company supplier, about 1.6 acre feet would be saved over the ten year estimated life of the appliances.

NOTE: The budget estimate is based on the lowest price quoted by a retrofit kit supplier. However, because of exceptional difficulties two other water agencies in our area have had with this supplier, the EGWS does not expect to do any business with this company. Therefore, it can be expected that actual project costs will be higher.

BMP 3—System water audits, leak detection and repair

Within EGWS two service areas, Tariff Area No. 1 and No.2, there exists two very different conditions of the water distribution infrastructure. Tariff Area No. 2 has water distribution infrastructure that was professionally inspected and tested during installation and is no older than 5 years in age. Leaks in this area would not be anticipated and receive little benefit when compared to the cost to identify any leaks.

In comparison, Tariff Area No. 1 has water distribution infrastructure that is significantly older with fragile asbestos-cement pipe (ACP) or old steel pipe. Much of this pipe is close to, or beyond, the normal life cycle you would expect to have with such infrastructure. EGWS maintenance and operation staff provides regular repairs on leaks in this service area. The current situation does not warrant significant expenses in implementing a leak detection program, but rather, EGWS is developing an infrastructure replacement program for this aged material. Data is currently being collected and reviewed to determine the areas that have had significant leaks or repairs to target those areas first.

BMP 6—High-efficiency washing machine rebate programs

The FRCD/EGWS does not have a washing machine rebate program as this BMP is not cost effective at this time. Project costs for such a program are estimated to be \$7300 for a limited rebate program (\$50 rebates to 100 homes). Local utilities and the Regional Water Authority are currently in discussion to develop a program to begin in 2006. The EGWS is interested in participating in this program and will follow the project's developments.

BMP 10 – Wholesale agency assistance

Not applicable.

BMP 11 – Conservation pricing





The FRCD/EGWS has not yet implemented conservation pricing. As demand increases in this growing community, the FRCD/EGWS monitors rates of neighboring providers in order to remain comparable and competitive. The FRCD/EGWS does not provide sewer service, so this is not a factor in pricing issues.

BMP 14 – Residential ULFT replacement programs

The FRCD/EGWS does not participate in an Ultra Low Flow Toilet program at this time. The project costs for rebates of \$75 to 200 single family units and 50 multi-family units is conservatively \$25,860. The local wastewater utility does have a rebate program which is being discontinued.

2.9 Water Supply Projects and Programs (§ 10631(h))

Beginning in 2002, EGWS started developing a program to fulfill the goal of the FRCD Board of Directors to improve the water quality, increase the water system reliability, and provide better fire flow capabilities to the commercial and industrial areas of the system. As a result of these goals, an overwhelming positive response by the EGWS customers passed a rate increase of 80% to rid the water of its discoloration due to the historical presence of iron and manganese. This enabled EGWS to develop the Capital Improvement Program in order to meet these goals and objectives of the FRCD Board and of its customers.

The Capital Improvement Program is primarily a series of projects that replaces or upgrades existing water supply sources and infrastructure in Tariff Area No. 1 rather than developing supplies for meeting growth in the new developing areas (Tariff Area No. 2). The Improvement Program, however, does include the necessary infrastructure to support the remaining growth in Tariff Area No.1 to buildout conditions, which is currently at 90 – 95% built out.

The program includes replacing the 12 shallow wells with 5 new deep wells that pumps groundwater from the Mehrten Formation. These deep wells have much higher pumping capacities, 2 to 3 times that of the shallow wells around 1,800 to 2,000 gpm or higher. The new deep wells are pumped to a new centralized groundwater treatment facility for Iron, Manganese and Arsenic removal. A total of 4.0 MG of storage has been constructed at the new facility with 2 – 2.0 MG storage tanks. The water is then pumped into the system from a pumping station at the facility capable of delivering water up to 16,000 gpm through a series of new and planned large diameter water transmission mains. The program is over 70% complete and is already providing many of the EGWS customers with the promise of high quality and reliable water. The facility and wells are equipped with permanent and portable generators that will be capable of supplying all of Tariff Area No. 1 with water during power outages due to emergencies or rolling blackouts.





This Capital Improvement Program was primarily developed to address water quality and system reliability issues. It additionally addresses some of the aging infrastructure issues, but does not provide any improvements to the amount of water supply sources since the source is still groundwater from the same Central Basin.

2.10 Desalination Water (§ 10631(i))

The water quality of the groundwater in the Central Basin has a range of TDS with good quality ranging from 24 to 581 mg/l. The Basin is recharged by three rivers (on the north, west, and south) and moderate rainfall on the east in the foothills of the Sierra Nevada's. There are no reasonable opportunities for water suppliers in this Basin to pursue the development of desalinated water.

2.11 Wholesale Water Supplies (§ 10631(k))

EGWS has a contractual agreement with SCWA to provide wholesale water supplies to serve the area known as Tariff Area No. 2. The history between EGWS and SCWA goes back almost 20 years when SCWA started providing water to new growth areas west of the EGWS service areas. The relationship between the two agencies has been one of coordination and recognizing the strengths of each. The two agencies have now grown to be close neighbors geographically and possess a good understanding of the operations and needs of both service areas for EGWS. Since both agencies have common goals and are active with the basin wide programs, SCWA and EGWS have developed the buildout demands for both service areas and have incorporated those demands into each others UWMP's as well as the CSCGMP. Based on this understanding, it was not required that EGWS provide SCWA a separate formal submittal of the projected demands for Tariff Area No. 1. Through the coordinated effort of SCWA developing their 2005 UWMP, EGWS has received a draft copy of their plan that clearly identifies the water supply reliability for Tariff Area No. 2 during dry and multiple dry years as shown in **Table 2-12**. **Table 2-13** identifies the factors that may affect the reliability of the wholesale water deliveries. For additional information and details refer **Appendix G** for a copy of the SCWA 2005 Zone 41 UWMP.

Table 2-12					
Wholesale Supply Reliability - % of normal AFY					
Wholesale Supplier	Multiple Dry Year Years				
	Single Dry	Year 1	Year 2	Year 3	Year 4
SCWA Conjunctive Use	95%	85%	85%	85%	85%





Urban Water Management Plan, 2005 Update

Section 2 – Contents of UWMP

Table 2-13
Factors resulting in inconsistency of wholesaler's supply

Source of supply	Legal	Environment	Water Quality	Climate
Zone 40 Surface Water		CVP dry year cutbacks		
City of Sacramento Am. River POU Water				Dry and Critical Years require that the City curtail diversions at their Fairbairn WTP on the Am. River to 100 MGD. Add'l. supplies may be made up by either of the Sacramento River Diversions (existing and future)





3. DMM Implementation

EGWS continues to make progress toward developing and implementing its Demand Management Measures (DMMs) or Best Management Practices (BMPs) that provide sufficient benefits. EGWS has applied for grants, although it has not been very successful in obtaining funding from the available grants. The needs of water suppliers have grown due to the number of responsibilities and regulations placed on them in an economic market that is limited in available funding sources. However, EGWS is performing its planning efforts in a responsible manner and reviewing its financial resources to meet the requirements it faces. When additional grant funding is identified, EGWS should meet the qualifications to be considered for such funding by DWR or other such agencies. For additional details on the determination of DMM implementation, refer to **Section 2.7**.





Urban Water Management Plan, 2005 Update Section 4 –Water Shortage Contingency Plan

4. Water Shortage Contingency Plan

4.1 Stages of Action (§ 10632(a))

Since EGWS receives wholesale water from SCWA for Tariff Area No. 2, we are subject to the same conditions in SCWA's Water Shortage Contingency Plan. EGWS has established a Water Shortage Contingency Plan that remains consistent with the plan identified in the SCWA 2005 Zone 41 UWMP and as shown in **Table 4-1** below.

Table 4-1 Water Supply Shortage Stages RATIONING STAGES		
Stage No.	Actions taken by EGWS	% Shortage
1	Water rationing	15%
2	No new water connections to the system	15-25%
3	Landscape irrigation shall be limited to once per week	25-35%
4	Landscape irrigation will not be permitted	35-50%
Final	Mandatory prohibitions on water use	50% or more

4.2 Minimum Supply (Next 3 years) (§ 10632(b))

EGWS relies on groundwater for its water supply in Tariff Area No. 1. Our wholesaler, SCWA, also currently relies primarily on groundwater for its service areas as well as EGWS' Tariff Area No. 2. If the next three years from 2006 through 2008 were equivalent to the driest three years sequence in history, both EGWS and its wholesaler, SCWA, would be able to meet 100% of its demands utilizing existing groundwater supplies. See Table 4-2 for a summary based on current 2005 demands for Tariff Area No. 1. For Tariff Area No. 2, please refer to the SCWA 2005 Zone 41 UWMP found in **Appendix G**.

Table 4-2 Three-Year Estimated Minimum Water Supply - AF Year (Tariff Area No. 1 only)				
Source	Normal	2006	2007	2008
Groundwater	6,168	6,192	6,217	6,242
Total	6,168	6,192	6,217	6,242





Urban Water Management Plan, 2005 Update

Section 4 – Water Shortage Contingency Plan

4.3 Catastrophic Supply Interruption Plan (§ 10632 (c))

EGWS has participated in recent area wide updates to Disaster Preparedness Plans and has also performed a Vulnerability Assessment on the water system, which includes Administration, Operation, and Maintenance activities and staff. This followed with a detailed update to its Emergency Response Plan, whether the emergency was a result of a natural disaster, or a malevolent act.

In addition to coordinating with other agencies and conducting regular training exercises with appropriate staff, consultants, and outside personnel or agencies, EGWS has intentionally developed multiple layers of redundancy into the design and construction of its new infrastructure, while even taking advantage of the additional reliability that can be gained by keeping some of the older infrastructure in cases of a catastrophe.

These preparations include:

- Emergency backup generators at its major facilities and portable generators at key well sites. All of the wells have the capability to connect to the portable generators.
- Stored emergency water in above ground storage tanks that have been sized to hold at least 1.0 MG of potable water in the event of an emergency or fire.
- Capabilities to bypass storage tanks, treatment process, booster pumps, and transmission mains. This would allow any number of combinations that could even allow the pumping of potable water directly into the smaller distribution water lines from our new deep wells or older shallow wells in the event a major catastrophe disabled the new centralized storage, treatment and pumping facility.
- Emergency communication equipment that would allow communication to key personnel without the use of regular land based telephone lines or regular cellular phone communications.
- Key locations for emergency inter-tie connections with our neighboring water supplier for delivery of water in either direction.

Within the Emergency Response Plan, key contact information, and phone numbers are already identified so information appropriate to the event will allow the efficient and quick response to EGWS customers, police, fire, medical, regulatory, media, and others. This information is kept current on a regular basis and the Plan is updated as additional information is learned or where improvements can be made. See **Table 4-3** for a summary of actions in preparation for potential catastrophes.





Urban Water Management Plan, 2005 Update

Section 4 – Water Shortage Contingency Plan

Table 4-3
Preparation Actions for a Catastrophe

Catastrophe	Summary of Actions
Regional power outage	Automatic emergency generators available at key facilities to provide sufficient water to meet maximum daily demands. Invoke Emergency Response Plan, if necessary.
Earthquake	Depending on severity, infrastructure has been designed with several layers of redundancy. If primary facility is disabled, all unaffected wells have the ability to pump directly into the distribution system. Invoke Emergency Response Plan, if necessary.
Flood	Depending on severity, infrastructure has been designed with several layers of redundancy. The primary facility is located near the highest elevation within the EGWS service area. If this facility is impacted, all unaffected wells have the ability to pump directly into the distribution system. Emergency inter-tie connections with neighboring water supplier is available, if necessary. Invoke Emergency Response Plan, if necessary.

4.4 Prohibitions, Penalties and Consumption Reduction Methods (§ 10632 (d-f))

As stated previously in **Section 4.1**, EGWS receives wholesale water from SCWA for Tariff Area No. 2, and is subject to the same conditions in SCWA's Water Shortage Contingency Plan. If during a water shortage or catastrophic event, EGWS will follow a Water Shortage Contingency Plan that has been established to remain consistent with the plan identified in the SCWA 2005 Zone 41 UWMP. This would include the same or similar notices as well as implementing voluntary restrictions, mandatory restrictions or rationing, and fines for non-compliance. **Table 4-4, 4-5 and 4-6** summarizes the actions that EGWS can take during a water shortage based on the similar actions outlined by SCWA.





Urban Water Management Plan, 2005 Update Section 4 –Water Shortage Contingency Plan

**Table 4-4
Mandatory Prohibitions**

Examples of Prohibitions	Stage When Prohibition Becomes Mandatory
Using potable water for street washing	5
Washing cars	5
Watering lawns and landscaping	5
Non-permanent agriculture	5
Uncorrected plumbing leaks	5
Gutter flooding	5
Other - Restaurants shall serve water to customers only upon specific request	5
Other - All swimming pools, ponds, and fountains shall be equipped with recirculating pumps	1

**Table 4-5
Consumption Reduction Methods**

Consumption Reduction Methods	Stage When Method Takes Effect
Demand reduction program	1
Reduce pressure in water lines	
Flow restriction	2
Restrict building permits	5
Restrict for only priority uses	1
Use prohibitions	
Water shortage pricing	
Per capita allotment by customer type	
Plumbing fixture replacement	
Voluntary rationing	1
Mandatory rationing	5
Incentives to reduce water consumption	1
Education program	1
Percentage reduction by customer type	4





Urban Water Management Plan, 2005 Update

Section 4 –Water Shortage Contingency Plan

Table 4-6
Penalties and Charges

Penalties or Charges	Stage When Penalty Takes Effect
Penalty for not reducing consumption	Repeated violations call for meter installation or placement of flow restrictor
Charge for excess use	Repeated violations call for meter installation or placement of flow restrictor
Flat fine	
Charge per unit over allotment	
Flow restriction	
Termination of service	

4.5 Revenue Impacts During Shortages (§ 10632 (g))

EGWS has established a sufficient reserve fund to cover shortfalls for lower than anticipated revenues in the event of a dry year or multiple dry year where either voluntary or mandatory consumption reduction methods were used to deliver lower than normal water supplies. The reserve fund will also protect EGWS in the case where revenues are reduced due to a mild summer causing water use to drop to below normal deliveries.

The more significant impact is in the event of a catastrophe where water shortages or reductions in deliveries would cause a drastic reduction in revenues and a likely increase in costs to repair damaged infrastructure or facilities. In this scenario, the reserve fund would be completely depleted and additional sources of revenue and funding would be required. A combination of rate adjustments and seeking funding assistance from local, state, and federal agencies through disaster grants and loans would be accomplished.

EGWS has funded its major capital improvement program with bond financing in the forms of Certificates of Participation (COP's). As a condition of these bonds, EGWS is required to meet a rate covenant (ratio of revenues to expenses) of 1.20 to ensure that there are sufficient revenues to repay the bonds. EGWS tracks the revenues and expenses very closely throughout the year to ensure that these items are on track. If the rate covenant was not met, it would trigger the requirement of a rate study with subsequent rate adjustments or cost cutting measures to occur. Refer to **Table 4-7** and **4-8** for a summary of proposed measures to overcome impacts to revenues or expenditures.





Urban Water Management Plan, 2005 Update Section 4 –Water Shortage Contingency Plan

Table 4-7 Proposed measures to overcome revenue impacts	
Name of measures	
Rate adjustment	
Development of reserves	
Disaster grants or loans	

Table 4-8 Proposed measures to overcome expenditure impacts	
Name of measures	
Reserve funds	
Reduce non-critical costs and expenses	
Defer non-critical costs and expenses	
Rate adjustment	

Not related to the rate covenant requirements since it is meeting the criteria, EGWS is soliciting proposals to conduct a rate study. This study will review and identify appropriate levels of reserves, fees and charges, as well as options to help fund some of the programs that have been identified to address issues of aging infrastructure, a meter retrofit program, and others.

4.6 Draft Ordinance and Use Monitoring Procedure (§ 10632 (h&i))

4.6.1 Draft Ordinance

As stated previously in **Section 4.1**, EGWS receives wholesale water from SCWA for Tariff Area No. 2, and is subject to the same conditions in SCWA's Water Shortage Contingency Plan. A Water Shortage Contingency Plan Resolution or Ordinance for Tariff Area No. 1 has not yet been completed for submittal with this UWMP. In order to prepare and adopt a resolution or ordinance that is consistent with that of SCWA, it is the intention of EGWS to coordinate with SCWA staff and EGWS legal counsel over the next few months to draft similar language. The draft resolution or ordinance will then be submitted to DWR to amend this UWMP. The Draft Water Shortage Contingency Plan Resolution, once complete, can be found in **Appendix D**.

4.6.2 Use Monitoring Procedures

As stated previously in **Section 4.1**, EGWS will perform similar measures as SCWA when following the respective Water Shortage Contingency Plan. Thus EGWS will





Urban Water Management Plan, 2005 Update Section 4 –Water Shortage Contingency Plan

monitor water demand and production utilizing consistent mechanisms as shown in **Table 4-9**. For additional detail, refer to **Appendix G** for a copy of the SCWA 2005 Zone 41 UWMP.

Table 4-9 Water Use Monitoring Mechanisms	
Mechanisms for determining actual reductions	
Use normalized or average water use to determine reductions	
More frequent review of production	
More frequent meter reading at customer location	
More frequent leak detection and repair	
More frequent meter checking and repair	
System audit	
Automated sensors and telemetry	
Monitor utility actions	
Penalties for customers	





5. Recycled Water Plan

The opportunity for recycled water for EGWS has not significantly changed since the information provided in the 2000 UWMP. The size of the area that EGWS is responsible in relation to SCWA's Zone 40 or other portions of the County of Sacramento is fairly small. Thus, EGWS relies on its wholesaler, SCWA, as a lead agency to assist EGWS in looking for opportunities to develop recycled water. Currently, the availability, location, and the cost to deliver recycled water to beneficial locations in the EGWS service areas still remains cost prohibitive.

5.1 Coordination (§ 10633)

EGWS recently attended one of the regularly scheduled CSCGF meetings, where a presentation was provided by the Sacramento Regional County Sanitation District (SRCSD) on the latest activities and progress in recycled water for the area. For a detailed description of the SRCSD Recycled Water Plan and the Water Recycling Master Plan they are expected to complete in 2006, refer to **Appendix G**, Section 4 in the SCWA 2005 Zone 41 UWMP. **Table 5-1** provides a summary of the agencies that have participated or coordinated on the Recycled Water Plan with the wastewater agency.

Table 5-1 Participating agencies	
Water Agencies	SCWA and others
Wastewater Agencies	SRCSD
Grassroots Agencies	EGWS and others
Planning Agencies	CSCGF, City of Elk Grove, County of Sacramento and others

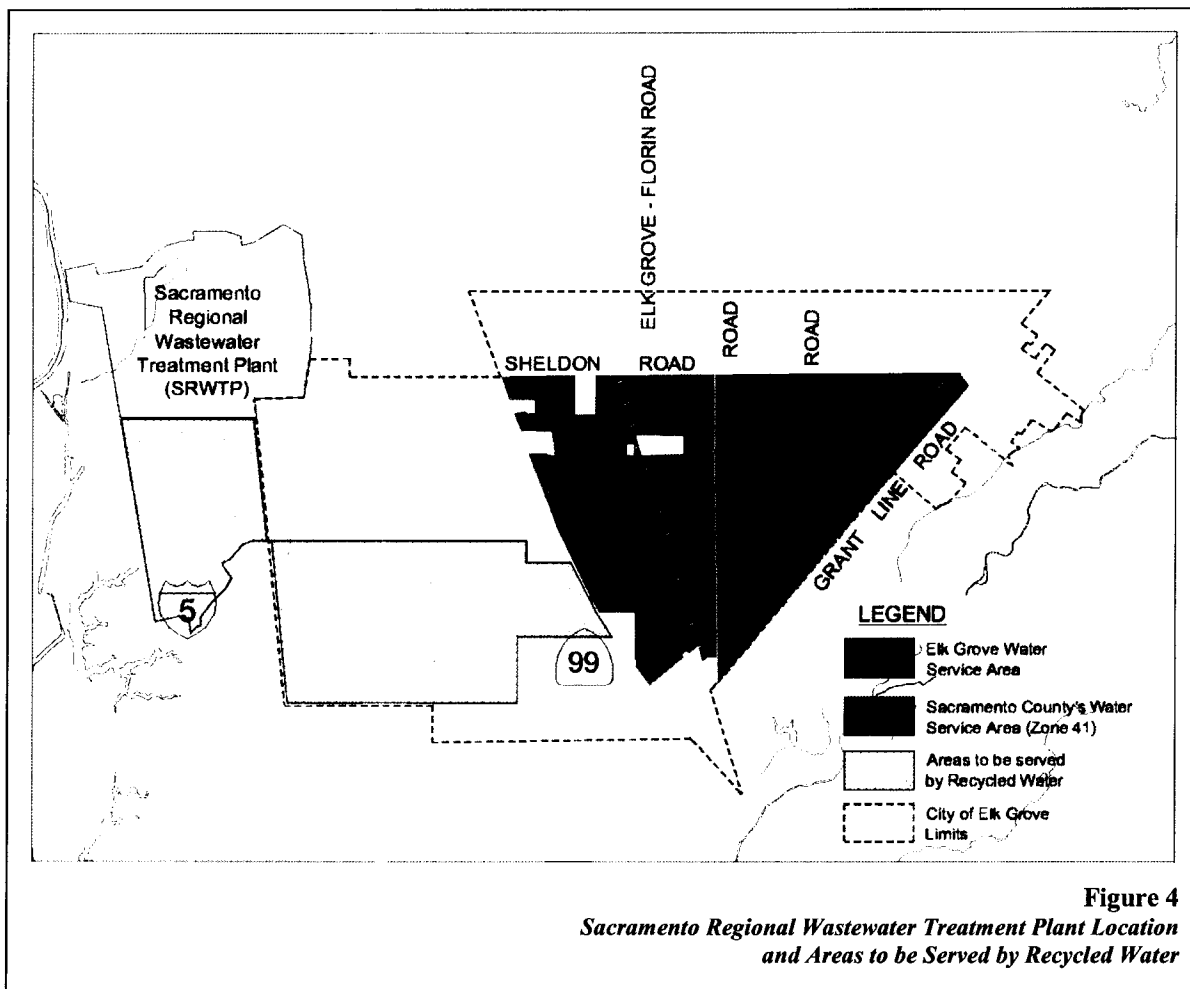
5.2 Wastewater Quantity, Quality and Current Uses (§ 10633 (a-c))

The wastewater system within the EGWS service area also has not significantly changed since the information provided in the 2000 UWMP. Tariff Area No. 1 is 90 - 95% built out and no major infrastructure projects are required to meet the needs of the remaining 5 - 10%. Information from the 2000 UWMP has been provided with updated information or tables where it has changed.



5.2.1 Wastewater System Description

The Sacramento Regional County Sanitation District (SRCSD) is responsible for the collection and treatment of wastewater within the FRCD/EGWS water service area. SRCSD owns and operates the Sacramento Regional Wastewater Treatment Plant (SRWTP) shown on **Figure 4**. The SRWTP is located approximately 5 miles west of the FRCD/EGWS service area.



5.2.2 Wastewater Collection System Description

The service area covered by the SRWTP collection system includes the Sacramento Metropolitan area, including the cities of Sacramento, Citrus Heights, Elk Grove and Folsom, and the urbanized areas of the County of Sacramento. The City of Folsom is responsible for collection system operation and maintenance within its city limits. The City of Sacramento is responsible for operation and maintenance of portions of the collection system within its city limits, and the Sacramento County Sanitation



Urban Water Management Plan, 2005 Update

Section 5 –Recycled Water Plan

District 1 (CSD-1) is responsible for the remainder. CSD-1 is also responsible for the collection system operation and maintenance in the cities of Citrus Heights and Elk Grove, and in the unincorporated areas of Sacramento County. The collection system consists of approximately 3000 miles of sanitary sewers and 90 miles of sanitary interceptors.

5.2.3 Wastewater Flow Projections

(Note: The following information is based on the SCWA 2005 Zone 41 UWMP.)

SRCSO only treats wastewater to Title 22 or tertiary levels at their 5 MGD recycled water treatment plant. Note that the Regional Plant effluent discharge flow projections provided below in are for the entire SRCSO service area and covers more than the EGWS or SCWA service areas. Wastewater flow projections through the year 2020 are listed below and shown in **Table 5-2** and **5-3**.

Table 5-2 Wastewater Collection and Treatment - AF Year							
Type of Wastewater	2000	2005	2010	2015	2020	2025	2030 - opt
Wastewater collected & treated in service area (ADWF) ¹	189,317	194,918	219,563	235,246	244,208	N/A	N/A

¹ Average dry weather flow, as defined by the 3 consecutive, lowest flow months

Note: Source of data, SCWA 2005 Zone 41 UWMP. Values provided in table represent the entire SRCSO Service Area and covers more than the EGWS service areas.

Table 5-3 Disposal of wastewater (non-recycled) AF Year							
Method of Disposal	Treatment Level	2000	2010	2015	2020	2025	2030 - opt
Discharge to Sac. River	Tertiary	190,518	215,163	230,846	239,808	N/A	N/A
Total		190,518	215,163	230,846	239,808	0	0

5.2.4 Current Recycled Water Uses

The SRCSO Recycled Water Treatment Plant started delivering recycled water in 2002. Recycled Water was delivered to the areas in Laguna West, Lakeside, and Laguna Stonelake. No recycled water was delivered within the EGWS water service area.





5.3 Potential and Projected Use (§ 10633 (d-g))

5.3.1 Potential Use of Recycled Water

Potential uses of recycled water has been studied by the SRCSD and include the following:

- Wetlands enhancement on and adjacent to the SRWTP in Elk Grove and in the Stonelakes Wildlife Refuge (up to 12,000 af/yr)
- Agricultural irrigation in south Sacramento County (up to 81,000 af/yr)
- Urban landscape irrigation south of the American River (up to 5,300 af/yr)
- Urban landscape irrigation north of the American River (up to 17,000 af/yr)
- Urban landscape irrigation in City of Folsom (up to 5,700 af/yr)
- Expansion of the existing 5 mgd demonstration water recycling facility to 10 mgd to provide landscape irrigation water to the future development areas south of Laguna known as the East Franklin Specific Plan Area and the Laguna Ridge Specific Plan Area.

5.3.2 Projected Use of Recycled Water

Current volume of recycled water being used is up to 5 mgd (2,300 af/yr) with the projected volume of 10 mgd (4,600 af/yr). The recycled water deliveries are all projected within SCWA's Laguna water system west of Highway 99. There are currently no plans to deliver recycled water within the boundaries of the EGWS area. Recycled water will always be considered as an option for the long term planning efforts of EGWS in determining the most economical, reliable, and quality water supply for its customers.

The EGWS service area's Tariff Area No. 1 is located closest to the SRCSD's Recycled Water Treatment Plant approximately 5 miles away. Tariff Area No. 1 is primarily built out and the installation of recycled water would be cost prohibitive at this time when compared to other water supply sources. The majority of Tariff Area 2 is located approximately 7 miles from the SRCSD Recycled Water Treatment Plant and would also be cost prohibitive when compared to other water supply sources. Tariff Areas No. 1 and No. 2 of the EGWS have been considered within the SRCSD's feasibility analyses. Extensive recycled water use is not currently economically feasible in the Sacramento area. Extensive infrastructure requirements make recycled water cost prohibitive when compared to other water supply sources. Continued secondary treatment of wastewater prior to discharge to the Sacramento River for use downstream appears to be the best technical and economic solution for the SRCSD.

5.3.3 Encouraging Use of Recycled Water

Due to the relationship between the EGWS, SCWA, and SRCSD, cooperative efforts are necessary to ensure the best uses of available resources. As stated in the previous paragraphs, EGWS does not have plans to deliver recycled water to its Tariff Area





Urban Water Management Plan, 2005 Update

Section 5 –Recycled Water Plan

No. 1 or No. 2. However, Tariff Area No. 2 is supplied with potable water from the SCWA as the wholesaler. The wholesale water rates charged by the SCWA are based in part from programs for developing alternative sources of water elsewhere in their service area including recycled water and surface water.

5.3.4 Optimizing Use of Recycled Water

EGWS will continue to consider recycled water as an alternative water supply for their long term planning efforts. EGWS will continue to work closely with the SCWA and the SRCSD for opportunities to maximize recycled water use. As water supplies for potable use become more costly to develop, recycled water and other alternative sources of non-potable water supplies will continue to become more economically feasible. EGWS is a current participant in the Sacramento Water Forum Successor Effort's Central Sacramento County Groundwater Forum. This program is bringing all of the stakeholders together to discuss the issues related to the protection and efficient use of the groundwater basin to meet everyone's needs now and into the future.





6. Water Quality Impacts on Reliability

EGWS has been relying on the groundwater in the area for over 100 years and in most cases, the quality meets all primary drinking water standards in the Central Basin. As indicated in **Section 2.9**, EGWS is making some major infrastructure upgrades including utilizing the groundwater in a lower aquifer that provides multiple benefits, including a more protected reliable source of supply. These benefits are summarized below:

- Additional protection from surface or near surface contamination since lower aquifer has significant confining layers.
- Water quality in lower aquifer generally meets all primary drinking water standards, including the new Arsenic standard effective January 2006.
- Fewer groundwater users of lower aquifer due to depths around 1,000 ft provides additional protection.

The deeper wells have slightly higher levels of Iron and Manganese that exceed the secondary drinking water standards based on aesthetics. However, both are easily removed using proven treatment methods of oxidation/filtration where the addition of chlorine is used for both an oxidant in the treatment process and serves as a disinfectant for a safe, reliable delivery to our customers. With better groundwater management practices and utilization of aquifers that provide greater levels of protection from contaminants, EGWS is able to deliver more reliable water with no anticipated impacts to water quality.





Urban Water Management Plan, 2005 Update Section 7 –Water Service Reliability

7. Water Service Reliability

As discussed in previous sections, EGWS relies on groundwater as its primary supply. As a member of the CSCGF, a Groundwater Management Plan is expected in early 2006, which should allow its members to continue to provide a reliable supply of water with the addition of surface water to the area allowing for the opportunities of a conjunctive use program. This will allow the ability to rely on surface water in wet years, and groundwater in the drier years without creating an overdraft situation. The availability of groundwater supplies for Tariff Area No. 1 are not impacted during a single dry or multiple dry years as shown in the following Tables 7-1 to 7-3 when compared to a normal/wet year.

Table 7-1
Projected Normal, Dry and Multiple Dry Water Supply - AF Year

	2010	2015	2020	2025	2030 - opt
Supply	7,757	7,835	7,913	7,984	8,000
% of year 2005	102%	103%	104%	105%	105%

Table 7-2
Projected Normal, Dry and Multiple Dry Water Demand - AF Year

	2010	2015	2020	2025	2030 - opt
Demand	7,757	7,835	7,913	7,984	8,000
% of year 2005	126%	127%	128%	129%	130%

Table 7-3
Projected Normal, Dry and Multiple Dry Supply and Demand Comparison - AF Year

	2010	2015	2020	2025	2030 - opt
Supply totals	7,757	7,835	7,913	7,984	8,000
Demand totals	7,757	7,835	7,913	7,984	8,000
Difference	0	0	0	0	0
Difference as % of Supply	0%	0%	0%	0%	0%
Difference as % of Demand	0%	0%	0%	0%	0%

Tariff Area No. 2 is supplied by wholesale water from SCWA and water service reliability will be more susceptible to dry and drier years. This information for Tariff Area No. 2 is provided in the SCWA 2005 Zone 41 UWMP provided in **Appendix G**.





Urban Water Management Plan, 2005 Update Section 8 –Adoption and Implementation

8. Adoption and Implementation

The UWMP was adopted by FRCD/EGWS on December 21, 2005. A copy of the public notices are included in **Appendix B** and a copy of the Board of Directors' resolution is included in **Appendix C**. After adoption of the UWMP, FRCD/EGWS will provide copies to DWR, agencies listed in Table 1-1, make it available to our customers and other interested parties on their website www.egws.org, and file a copy with the California State Library, as required. EGWS will implement its UWMP in accordance to the schedule set in this document.

Note: Urban Water Suppliers are now required to submit a copy of their Urban Water Management Plan to the California State Library at:

**Government Publications Section
California State Library
914 Capitol Mall, MS E-29
P.O. Box 942837
Sacramento, CA 94237-0001**





9. Miscellaneous Provisions

[This section has been left intentionally blank. No information required.]

